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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/529,121 | 10/11/2005 | Johannes Antonius Joseph Jacobs | VOB-38027 | 1564 |
| 86378 | 7590 | 05/27/2010 | | |
| Pearne & Gordon LLP 1801 East 9th Street Suite 1200 Cleveland, OH 44114-3108 | | | EXAMINER GOFF II, JOHN L | |
| | | | ART UNIT 1791 | PAPER NUMBER |
| | | | NOTIFICATION DATE 05/27/2010 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/529,121 | Applicant(s) JACOBS ET AL. | |
| | Examiner John L. Goff | Art Unit 1791 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-19,21,22,24-31,33 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19,21,22,24-31,33 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 3/4/10. The previous 35 USC 112 rejections have been overcome.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

3. Applicant is advised that should claim 29 be found allowable, claim 30 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

4. Claims 17-19, 21, 22, 24, 25, 29-31, 33, and 36-38 are rejected under 35 U.S.C. 102(b) as anticipated by Ferrar et al. (U.S. Patent 5,578,370).

Ferrar teaches a method of forming a solid, thermoplastic reinforcing woven fabric/cloth considered a tape, film, or yarn formed from a material consisting of a central layer of propylene (greater than 50 wt. % of the tape) sandwiched between two layers of propylene copolymer which two layers have a lower melting point (considered DSC melting point) than the central layer including monoaxially drawing the tape having a stretch ratio of more than 12 and having

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an E-modulus of at least 5 GPa. Ferrar further teaches providing a first fabric of the woven described above considered an article, and overlaying the first fabric with a second fabric of the woven described above considered a drawn thermoplastic polymer of ABA type and applying heat, i.e. a heat treatment, and pressure to attach the second fabric to a surface of the first fabric (Column 2, lines 39-61 and Column 3, lines 13-19 and Examples 4 and 6).

It is noted the claims require a “method for reinforcing an article in a three-dimensional manner”. The claims further require “said article has been shaped in a three-dimensional manner simultaneously with or before applying the tape, film or yarn”. Ferrar teaches the fabrics are attached in a mould or former wherein following cooling the attached fabrics assume a predetermined three-dimensional shape (Column 3, lines 10-12). Thus, Ferrar teaches shaping the first fabric in a three-dimensional manner simultaneously with applying the second fabric to reinforce the first fabric.

Regarding claims 24 and 38, Ferrar is considered to teach monoaxially drawing the tape as there is no specific teaching of drawing the tape in more than one direction. Ferrar teaches stretching the tape to increase its strength. Ferrar teaches as exemplary a stretch ratio of 20 resulting in an E-modulus of at least 5 GPa. The Office is unequipped to specifically test the tape for the E-modulus property. However, because the tape is made of materials consistent with that disclosed by applicants as materials with stretch ratios greater than 12 resulting in an E-modulus of at least 10 GPa the tape taught by Ferrar is considered to have the claimed property absent a specific showing or convincing argument otherwise.

Regarding claim 31, the reinforced article taught by Ferrar is at least an article for ballistic purposes.

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It is noted claims 29-31 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The product taught by Ferrar is the same as the product in the product-by-process claim. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (See MPEP 2113).

Claim Rejections - 35 USC § 103

5. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrar.

Ferrar is considered to teach the claimed stretch ratio and E-modulus as set forth above. However, the stretch ratio and E-modulus are merely exemplary, and in the event it is shown Ferrar does not necessarily teach the E-modulus the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stretch the tape as taught by Ferrar to ratios of greater than 20 thereby further increasing the E-modulus to at least 10 GPa as only the expected results of further increasing the strength of the tape would be achieved.

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6. Claims 17-19, 21, 22, 24, 25, 29-31, 33, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauber (U.S. Patent Application Publication 2002/0054968) in view of Ferrar, or alternatively, Ferrar in view of Hauber.

Hauber discloses a method of reinforcing a pipe, i.e. an article that has been shaped in a three dimensional manner, comprising providing a thermoplastic polypropylene pipe (14 of Figure 1), wrapping the pipe with a preformed reinforcement tape of a polymer (26 of Figure 1), and applying heat, i.e. a heat treatment, and pressure to attach the tape to the pipe. The pipe is an article that has been shaped in a three-dimensional manner before applying the tape. The tape is shaped into a three-dimensional manner simultaneously with or before forming the reinforced pipe (Figure 1 and Paragraphs 0001, 0011, 0012, and 0018). Hauber is silent as to the tape comprising a drawn thermoplastic polymer of ABA type. However, Hauber does teach the polymer of the tape must have a softening point less than that of the polymer of the thermoplastic pipe. Ferrar teaches a tape having good mechanical strength for reinforcing articles comprising a solid, thermoplastic woven tape consisting of a central layer of propylene (greater than 50 wt. % of the tape) sandwiched between two layers of propylene copolymer which two layers have a lower melting point (considered DSC melting point) than the central layer including monoaxially drawing the ABA type tape having a stretch ratio of more than 12 and having an E-modulus of at least 5 GPa. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the preformed reinforcement tape of Hauber the tape taught by Ferrar a known reinforcement tape with good mechanical strength having surface layers which soften at a temperature lower than polypropylene, i.e. the polymer of the thermoplastic pipe taught by Hauber. Alternatively, Ferrar teaches the tape is a reinforcement for use in general

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engineering applications including wherein the tape is wound (Column 8, lines 4-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the tape as taught by Ferrar to reinforce a thermoplastic polypropylene pipe wherein the tape is wound around the pipe and attached to the pipe using heat and pressure as shown by Hauber as Ferrar specifically teaches the tape is reinforcement for general engineering applications without requiring any particular type of application.

Regarding claims 18, 19, 22, 33, and 37, the pipe comprises a solid thermoplastic material such as a polypropylene, and the tape comprises a drawn thermoplastic polypropylene, i.e. the pipe and tape comprise essentially the same composition.

Regarding claims 24 and 38, Ferrar is considered to teach monoaxially drawing the tape as there is no specific teaching of drawing the tape in more than one direction. Ferrar teaches stretching the tape to increase its strength. Ferrar teaches as exemplary a stretch ratio of 20 resulting in an E-modulus of at least 5 GPa. The Office is unequipped to specifically test the tape for the E-modulus property. However, because the tape is made of materials consistent with that disclosed by applicants as materials with stretch ratios greater than 12 resulting in an E-modulus of at least 10 GPa the tape taught by Ferrar is considered to have the claimed property absent a specific showing or convincing argument otherwise. However, the stretch ratio and E-modulus are merely exemplary, and in the event it is shown Ferrar does not necessarily teach the E-modulus the following rejection would apply. It would have been obvious to one of ordinary skill in the art at the time the invention was made to stretch the tape as taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber to ratios of greater than 20 thereby further

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increasing the E-modulus to at least 10 GPa as only the expected results of further increasing the strength of the tape would be achieved.

Regarding claim 31, the reinforced pipe taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber is at least an article for the building/construction industry.

It is noted claims 29-31 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. The product taught by Ferrar is the same as the product in the product-by-process claim. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (See MPEP 2113).

7. Claims 26-28, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hauber and Ferrar as applied to claims 17-19, 21, 22, 23, 24, 25, 29-31, 33, and 36-38 above, and further in view of Yamaguchi et al. (WO 00/22334 with U.S. Patent 6,629,547 which claims priority to the WIPO document used as an English translation).

Hauber and Ferrar as applied above teaches all of the limitations in claims 26-28, 39, and 40 except for a specific teach of including a foam layer and a covering layer. Yamaguchi as discloses a method of forming a reinforced pipe similar to the that of Hauber including a teaching of after shaping a tape into a shaped material to act as a reinforcing material (182 of

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Figure 17) applying an insulating polyethylene foam layer (171 of Figure 17) and a protective polyethylene cover/finish layer (41 of Figure 17) to the shaped reinforcing material (Figure 17 and Column 30, lines 43-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply to the shaped tape reinforcing material taught by Hauber as modified by Ferrar or Ferrar as modified by Hauber a polyethylene foam layer and a polyethylene cover/finish layer as shown by Yamaguchi to insulate and protect the pipe.

Response to Arguments

8. Applicant's arguments filed 3/4/10 have been fully considered but they are not persuasive.

Applicants amendment has overcome the 35 USC 102 rejection over Yamaguchi.

Applicants argue, "In the method of Ferrar *et al* similar thermoplastic polymers are used (see column 3, lines 24-58). However, the present invention is novel over Ferrar *et al* as Ferrar *et al* is not directed to strengthening ("*reinforcing*") an existing object, but to creating an object out of rigid material. The amended claim 17 now contains the explicit requirement that the article in a three-dimensional manner is formed before the other component is applied."

Ferrar is considered to teach strengthening a first fabric with a second fabric as set forth above. The amended claims do not require the article is shaped in a three-dimensional manner before the other component is applied as the claim requires "said article has been shaped in a three-dimensional manner simultaneously with or before applying the tape, film or yarn" (Emphasis added).

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Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571)272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/
Primary Examiner, Art Unit 1791